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|---|---|
| 2637 | |

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Please find below and/or attached an Office communication concerning this application or proceeding.

| Advisory Action | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/627,571 | LIANG, HAIXIANG | |
| | Examiner | Art Unit | |
| | Edith M Chang | 2637 | |

*--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

THE REPLY FILED 14 December 2004 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

PERIOD FOR REPLY [check either a) or b)]

a) ☒ The period for reply expires 5 months from the mailing date of the final rejection.

b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on _____. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. ☐ The proposed amendment(s) will not be entered because:
   (a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);
   (b) ☐ they raise the issue of new matter (see Note below);
   (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
   (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.
   NOTE: _____.
3. ☐ Applicant's reply has overcome the following rejection(s): _____.
4. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5. ☒ The a)☐ affidavit, b)☐ exhibit, or c)☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: *See Continuation Sheet*.
6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7. ☒ For purposes of Appeal, the proposed amendment(s) a)☐ will not be entered or b)☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
   The status of the claim(s) is (or will be) as follows:
   Claim(s) allowed: _____.
   Claim(s) objected to: _____.
   Claim(s) rejected: *1-28*.
   Claim(s) withdrawn from consideration: _____.
8. ☒ The drawing correction filed on *14 December 2004* is a)☒ approved or b)☐ disapproved by the Examiner.
9. ☐ Note the attached Information Disclosure Statement(s)( PTO-1449) Paper No(s). _____.
10. ☐ Other: _____

Continuation of 5. does NOT place the application in condition for allowance because:

1. Regarding claim 1, Applicant argues that Okunev fails to teach or suggest assigning constellation points "wherein the one or more characteristic sets include contributions of symbol estimates from phase intervals associated with one or more other constellation indices"; and Okunev's translation tables are similar to the characteristic sets of symbol estimates of claim 1, nowhere does Okunev teach that the scaling factors or translation tables include contributions of symbol estimates from phase intervals "associates with one or more other constellation indices".

Okunev teaches assigning constellation points in FIG.8c and column 6 lines 29-33, wherein translation tables include contributions of symbol estimates from phase intervals "associates with one or more other constellation indices" in FIG.8c steps 870 to 874 and column 6 lines 17-33. The constellations are optimized by increasing the minimum distance between points (indices) in one or more slots ("these are associated one or more other constellation indices") having the maximum error probability ("symbol estimate") by permitting that slot(s) to exceed power limitations (cause the "aggregate effects of the periodic impairments"), provided the average power of the frame is not exceeded (column 6 lines 17-22). Hence Okunev teaches or suggests assigning constellation points "wherein the one or more characteristic sets include contributions of symbol estimates from phase intervals associated with one or more other constellation indices" as cited in the claim.

Okunev's grouping translation tables of phase intervals (slots or samples) based on similarity of aggregate impairment, the level values for each slot to determine the aggregate impairment (the distortion), such as the robbed bit signaling slots as stated in Abstract lines 1-10 and column 2 lines 32-40. Hence Okunev teaches that translation tables include contributions of symbol estimates from phase intervals "associates with one or more other constellation indices" as cited in the claim (refer to the second response of the previous office action).

2. Regarding claim 13, Applicant argues that Nowhere does Okunev teach or suggest selecting constellation points "based on characteristic groups associated with one or more respective phases", as required by claim 13.

Okunev teaches or suggests selecting constellation points based on characteristic translation tables (groups) associated with one or more respective slots (phases) in FIG.8c and column 6 lines 17-33, wherein the constellation is changed (column 6 lines 29-33, increasing minimum distance between points in one or more slots and checking the average frame power limitation wherein frame including multiple slots) "based on the translation tables/groups associated with one or more slots/phases" (column 6 lines 17-22). Therefore, Okunev teaches or suggest selecting constellation points based on characteristic groups associated with one or more respective phases, as required by claim 13.

3. Regarding claim 27, Applicant argues that Okunev fails to teach or suggest said instructions executable to "group N phases" of a symbol sequence "into a set of characteristic groups according to correspondence of aggregated effects of periodic impairments", "selecting constellation points using symbol estimates characteristic of the grouped phases", as cited in the claim 27.

Okunev teaches grouping "N slots/samples (phases)" of the digital impairment learning "(DIL) sequence" (in lines 4-5 of Abstract); into a set of translation tables ("characteristic groups") according to correspondence of the received levels of the transmitted octets (column 2 lines 31-36) wherein the received levels are the aggregated effects of periodic impairments such as PAD, robbed bits, etc. (column 2 lines 36-45); and "selecting constellation points" based on characteristic translation tables (groups) associated with one or more respective slots (phases) in FIG.8c and column 6 lines 17-33, wherein the constellation is changed (column 6 lines 29-33) based on the translation tables associated with one or more slots (column 6 lines 17-22). Hence Okunev teaches or suggestes said instructions as cited in the claim 27.

4. Regarding claim 1, Applicant argues that Okunev fails to teach or suggest grouping phase intervals into groups based on similarity of aggregate impairment exhibited therein.

Okunev teaches and suggests grouping translation tables (groups) of phase intervals (slots or samples) based on similarity of aggregate impairment, the level values for each slot to determine the aggregate impairment (the distortion), such as the robbed bit signaling slots as stated in Abstract lines 1-10 and column 2 lines 32-40. Hence Okunev teaches that grouping phase intervals into groups based on similarity of aggregate impairment exhibited therein as cited in claim 1.

5. Regarding claim 1, Applicant argues that the modulus encoding of Davis is not based on similarities of aggregate impairments as required by claim 1.

Davis teaches the well-known grouping of the received PCM signals (constellation points) into groups based on similarities of aggregate impairments such as a pad attenuation and for each of the 6 intervals (phases), an RBS type parameters, stated in column 7 lines 10-20, wherein 6 learned DIL constellations are created (column 7 lines 35-41). Therefore, Davis teaches grouping based on similarities of aggregate impairments as required by claim 1.

6. Regarding claims 13, 20, 25, and 27, Applicant argues that Davis fails to teach or suggest grouping the N phases into a set of characteristic groups according to aggregate effects of the periodic impairments regarding to claims 13, 20, 25, and 27.

Davis teaches the well-known grouping the N intervals of the received PCM signals (constellation points) into groups (Figure 2) based on similarities of aggregate impairments such as a pad attenuation and for each of the 6 intervals (phases), an RBS type parameters, stated in column 7 lines 10-20, wherein 6 learned DIL constellations are created (column 7 lines 35-41) on which the modulus encoding constellations generation based (column 7 lines 3-9). Therefore, Davis teaches or suggest grouping the N phases into a set of characteristic groups according to aggregate effects of the periodic impairments.

7. Regarding claim 25, Applicant argues that Krishnan fails to teach or suggest selecting constellation points based on characteristic groups associated with respective phase intervals, the grouping of phases into characteristic groups being based on

aggregate effects of periodic impairments as required by claim 25. For at least this reason, Applicants maintain that claim 25 distinguishes over Okunev, alone or in combination with other reference of record.

Krishnan teaches or suggests selecting constellation points (Figurer 13 step 1303) based on received DIL pattern. The DIL patterns are the grouping of slots (phases of DIL) into characteristic groups (Figure 2, column 3 lines 19-25, and column 4 lines 30-42 wherein frames are grouped and every 20 frame the sum is zero) associated with respective slots, the grouping (every 20 frames) being based on aggregated effects of periodic impairments.

Both Okunev and Davis teaches or suggests an apparatus and its method in the same endeavor, a DIL designed for providing reliable estimate of received code levels and to solve the same problem by deriving optimum symbol constellations to have a fast and reliable PCM (modem) communication (Abstract '296, column 2 lines 13-18 and column 2 lines 31-33 '171). Hence the reference teaches the claim alone or in combination.

YOUNG T. TSE
PRIMARY EXAMINER